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Edexcel

Mark Scheme (Results)

January 2019

Pearson Edexcel International GCSE  
In Mathematics (4MA0) Foundation Tier  
Paper 1F

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme.  
Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

- **Types of mark**
  - M marks: method marks
  - A marks: accuracy marks
  - B marks: unconditional accuracy marks (independent of M marks)
- **Abbreviations**
  - cao – correct answer only
  - ft – follow through
  - isw – ignore subsequent working
  - SC - special case
  - oe – or equivalent (and appropriate)
  - dep – dependent
  - indep – independent
  - eeo – each error or omission
- **No working**

If no working is shown then correct answers normally score full marks

If no working is shown then incorrect (even though nearly correct) answers score no marks.
- **With working**

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If it is clear from the working that the “correct” answer has been obtained from incorrect working, award 0 marks.

If a candidate misreads a number from the question. Eg. uses 252 instead of 255; method marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review. If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

If there is no answer on the answer line then check the working for an obvious answer.
- **Ignoring subsequent work**

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for

the question: eg. Incorrect cancelling of a fraction that would otherwise be correct.

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect eg algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

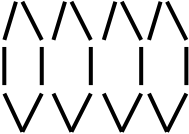
- **Parts of questions**

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

Apart from Question 18b where the mark scheme states otherwise, the correct answer, unless clearly obtained by an incorrect method, should be taken to imply a correct method.

Question	Working	Answer	Mark	Notes
<b>1</b> (a)		Nairobi	1	B1
(b)		8 million	1	B1
(c)		127 000	1	B1 accept -127 000
(d)		602 000	1	B1
<b>2</b> (a)		2	1	B1
(b)		× at 1	1	B1
(c)		× at 2/6	1	B1
(d)		× at 0	1	B1
<b>3</b> (a)		10	1	B1
(b)		12	1	B1
(c)		C	1	B1
(d)		A, F	1	B1

Question	Working	Answer	Mark	Notes
4 (a)		0.0053, 0.051, 0.0531, 0.503, 0.513	1	B1
(b)		0.06	1	B1
(c)		83	1	B1
(d)		$4\frac{3}{5}$ oe	1	B1
(e)	$\frac{18}{60}$	$\frac{3}{10}$	2	M1 for $\frac{18}{60}$ oe A1 SC B1 for 0.3
(f)	564 ÷ 3(= 188) <b>or</b> 504 × 2(= 1128) <b>and</b> "1128" ÷ 3	376	2	M1 A1

Question	Working	Answer	Mark	Notes
<b>5</b> (a)			1	B1
(b)		21, 26	2	B2 B1 for 21, B1 for 26
(c)	$5 \times 12 + 1$ or $26 + 7 \times 5$ or ...31, 36, 41, 46, 51, 56, 61	61	2	M1
(d)	$(201 - 1) \div 5$	40	2	M1 or for continuation of correct sequence up to 201  A1
<b>6</b> (i)		diameter	1	B1
(ii)		tangent	1	B1
(iii)		segment	1	B1



Question	Working	Answer	Mark	Notes
<b>7</b> (a)		$5k$	1	B1
(b)		$15de$	1	B1 Or $15ed$
(c)		$17g - 5f$	2	B2 If not B2 then B1 for $17g$ or $-5f$
<b>8</b> (a)		9	1	B1
(b)	$12 - 8$			M1 for 12 and 8 identified
		4	2	A1
(c)	8, 8, 9, 9, 9, 10, 11, 11, 12, 12	9.5	2	M1 for ordering 9 or 10 of the numbers (may appear in (a) or by list) or 9, 10 (sweets) identified A1
(d)	$8 + 8 + 9 + 9 + 9 + 10 + 11 + 11 + 12 + 12 (=99)$ <b>or</b> $9.8 \times 10 (=98)$ <b>or</b> $(8 + 8 + 9 + 9 + 9 + 10 + 11 + 11 + 12 + 12) \div 10$	Jamilla with 98 and 99 <b>or</b> 9.9	2	M1  A1

Question	Working	Answer	Mark	Notes
<b>9</b>	$20 \div 1.58 (= 12.65\dots)$ <b>or</b> repeated correct addition to 18.96 $20 - "12" \times 1.58$ or $20 - 18.96$	1.04	3	M1  M1  A1
<b>10</b>	(a)  (b) 4h 75 mins or $x$ hr and 15 mins  (c) $315 \div 75 (4.2)$ $4.2 \times 60 (= 252)$ <b>or</b> $"4.2 - 4 \times 60 (= 12)$	15 20  5 15 pm or 17 15  4 hours 12 mins	1  2  3	B1  M1 A1 Accept 5:15  M1  A1

Question	Working	Answer	Mark	Notes
<b>11</b>	(a)	9.3	1	B1
	(b)	3.375	1	B1
	(c)(i)	1.784(4....)	2	M1 for 4.13(4...) or 37.21 or $\frac{803}{450}$
	(c)(ii)	1.8	1	A1 B1 ft provided (ci) has 2 or more decimal places
<b>12</b>	$\left(\frac{4+9}{2}, \frac{-1+7}{2}\right)$ oe	(6.5, 3)	2	M1 for one coordinate correct or correct method to find one coordinate <b>or</b> (3, 6.5) A1 oe
<b>13</b>	Angle $ABD$ (or $ADB$ ) = $(180 - 38) \div 2$ (=71)  Angle $CBD$ = $100 - "71"$ (=29)  $y = 180 - 2 \times "29"$	122	4	M1  M1  M1  A1

Question	Working	Answer	Mark	Notes
<b>14</b>	$40 \div 5 (=8)$ "8" $\times$ 2.75 (=22) or "8" $\times$ 3.5 (=28) <b>or</b> $2.75 + 3.5 (=6.25)$ <b>or</b> $2.75 + 3.5 + 5 (=11.25)$ "8" $\times$ 2.75 + "8" $\times$ 3.5 + 40 <b>or</b> "22" + "28" + 40 <b>or</b> "6.25" $\times$ "8" + 40 <b>or</b> "11.25" $\times$ "8"	90	4	M1 Award this mark also if 22 or 28 seen M1 M1 dep on M2 A1
<b>15</b>	(a)	factors	1	B1
	(b)(i)	3,6,9	1	B1
	(b)(ii)	3, 6, 9, 12, 18	1	B1 with no repeats
	(c)	E.g. Yes as (12) is not in (set) A	1	B1 for Yes with reason(s)
<b>16</b>	$\pi \times 18$ oe <b>or</b> $2 \times \pi \times \frac{18}{2}$ oe	56.5	2	M1 A1 for 56.5 – 56.6

Question	Working	Answer	Mark	Notes
17	$13 + 9 (=22)$ <b>or</b> $18 + 4 (=22)$ <b>or</b> $40 - 18 (=22)$ $22 \times 2 (=44)$ <b>or</b> $(22 - 18) + 18 + 13 + 9 (=44)$	$\frac{9}{44}$	3	M1 M1 A1 for $\frac{9}{44}$ or 0.204(54545...)
17 ALT	$\frac{18+x}{40+x} = \frac{1}{2}$ $36 + 2x = 40 + x$ oe	$\frac{9}{44}$	3	M1 (dep) for a correct equation of the form $ax + b = cx + d$ <b>or</b> $x = 4$ A1 for $\frac{9}{44}$ or 0.204(54545...)

Question	Working	Answer	Mark	Notes
18 (a)		$y(y + 1)$	1	B1
(b)	$3m + 21 (= 12 - 5m)$	-1.125	3	M1
	$3m + 5m = 12 - 21$			M1 For isolating terms in $m$ in a correct equation or ft from $3m + 7 = 12 - 5m$
				A1 for -1.125 or $-\frac{9}{8}$ or $-1\frac{1}{8}$ oe
(c)	$g^2 + 2g - 7g - 14$	$g^2 - 5g - 14$	2	M1 dep on M1 for 3 terms correct or 4 terms correct without signs or
				$g^2 - 5g \dots$ or
				$\dots - 5g - 14$
				A1
(d)		$-4 < x \leq 3$	2	B2 or for $-4 < x$ and $x \leq 3$
				if not B2 then B1 for
				$-4 < x$ or $x \leq 3$ or $-4 \leq x < 3$

Question	Working	Answer	Mark	Notes
19	$96 \div (5 + 7) = 8$ $5 \times "8" (=40) \text{ or } 7 \times "8" (=56)$ $0.35 \times "40" (=14) \text{ or } \frac{3}{14} \times "56" (=12)$ $0.35 \times "40" + \frac{3}{14} \times "56"$	26	5	M1 M1 $0.35 \times 5 (=1.75)$ M1 $\frac{3}{14} \times 7 (=1.5)$ M1 $(1.75 + 1.5) \times "8"$ A1

Question	Working	Answer	Mark	Notes														
<p><b>20</b></p>	<table border="1" data-bbox="443 316 940 386"> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td>10</td> <td>7</td> <td>4</td> <td>1</td> <td>-2</td> <td>-5</td> </tr> </table>	x	-2	-1	0	1	2	3	y	10	7	4	1	-2	-5	<p><math>y + 3x = 4</math> drawn from <math>x = -2</math> to <math>x = 3</math></p>	<p>3</p>	<p>B3 For a correct line between <math>x = -2</math> and <math>x = 3</math></p> <p>B2 For a correct straight line segment through at least 3 of <math>(-2, 10)</math> <math>(-1, 7)</math> <math>(0, 4)</math> <math>(1, 1)</math> <math>(2, -2)</math> <math>(3, -5)</math>  <b>OR</b>  for all of <math>(-2, 10)</math> <math>(-1, 7)</math> <math>(0, 4)</math> <math>(1, 1)</math> <math>(2, -2)</math> <math>(3, -5)</math> plotted but not joined  <b>OR</b>  for a line drawn with a negative gradient through <math>(0, 4)</math> <b>and</b> clear intention to use a gradient of <math>-3</math> (eg. a line through <math>(0, 4)</math> and <math>(0.5, 1)</math>)</p> <p>B1 For at least 2 correct points plotted (ignore incorrect points) or stated(may be in a table) <b>or</b> may be shown in working eg. <math>4 - 3 \times 1 = 1</math> <b>OR</b>  for a line drawn with a negative gradient through <math>(0, 4)</math>  <b>OR</b>  a line with gradient <math>-3</math></p>
x	-2	-1	0	1	2	3												
y	10	7	4	1	-2	-5												



Question	Working	Answer	Mark	Notes
21	$\tan 52^\circ = \frac{RP}{12.7} \quad \text{or} \quad \tan (90 - 52)^\circ = \frac{12.7}{RP} \quad \text{or}$ $\frac{RP}{\sin 52^\circ} = \frac{12.7}{\sin(90-52)^\circ} \quad \text{or} \quad \frac{\sin 52^\circ}{RP} = \frac{\sin(90-52)^\circ}{12.7}$ $12.7 \times \tan 52^\circ \quad \text{or} \quad \frac{12.7}{\tan(90-52)^\circ} \quad \text{or}$ $\frac{12.7 \times \sin 52^\circ}{\sin(90 - 52)^\circ}$	16.3	3	<p>M1</p> <p>M1 For a complete method</p> <p>A1 for 16.25 – 16.3</p>

Question	Working	Answer	Mark	Notes
22	$2 \times 3.50 + 4 \times 4.25 (=24)$ "24" – 7.60 (=16.4) or $\frac{"24"}{7.60} \times 100 (=315.7..)$ $\frac{"16.4"}{7.6} \times 100$ or "315.7" – 100	216	4	M1 M1 M1 A1 for 215.7 – 216
23	$\frac{1}{2}(27 + 21) \times 8 (=192)$ $2 \times \frac{1}{2}(27 + 21) \times 8 (+) 21 \times 30 (+) 10 \times 30 (+) 27 \times 30$ $(+) 8 \times 30$	2364	3	M1 for area of cross section (but $\frac{1}{2}(27 + 21) \times 8 \times 30$ is M0) M1 for area of at least 4 faces A1

